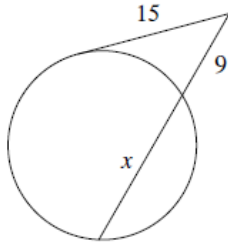


1)



$$(x+9)(9) = 15^2$$

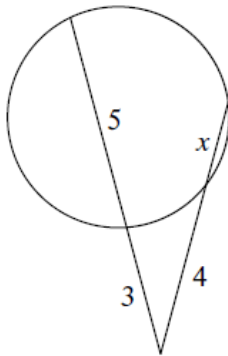
$$9x + 81 = 225$$

$$\quad -81 \quad -81$$

$$\frac{9x}{9} = \frac{144}{9}$$

$$x = 16$$

2)



$$(8)(3) = (x+4)(4)$$

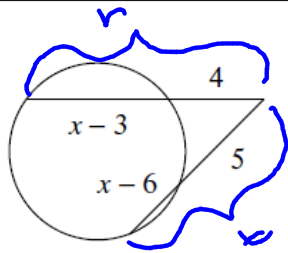
$$24 = 4x + 16$$

$$\quad -16 \quad -16$$

$$\frac{8}{4} = \frac{4x}{4}$$

$$2 = x$$

3)



$$r = x - 3 + 4$$

$$r = x + 1$$

$$t = x - 6 + 5$$

$$t = x - 1$$

$$(x+1)(4) = (x-1)(5)$$

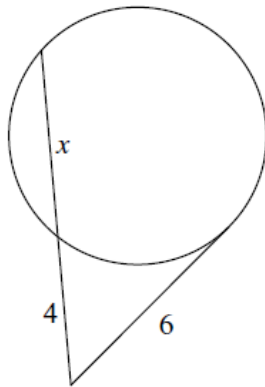
$$4x + 4 = 5x - 5$$

$$4x + 9 = 5x$$

$$-4x \quad -4x$$

$$9 = x$$

4)



$$(x+4)(4) = 6^2$$

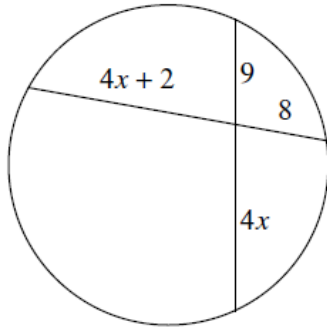
$$4x + 16 = 36$$

$$-16 \quad -16$$

$$4x = 20$$

$$x = 5$$

5)



$$(9)(4x) = (8)(4x+2)$$

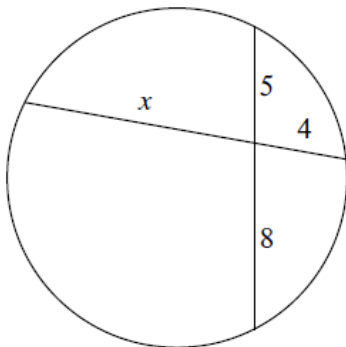
$$36x = 32x + 16$$

$$-32x \quad -32x$$

$$\frac{4x}{4} = \frac{16}{4}$$

$$x = 4$$

6)

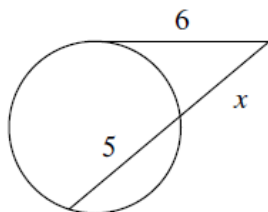


$$(5)(8) = (4)(x)$$

$$40 = 4x$$

$$10 = x$$

7)



$$(5+x)(x) = 6^2$$

$$5x + x^2 = 36$$

$$\uparrow -36 \quad -36$$

quadratic

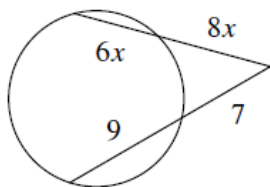
$$x^2 + 5x - 36 = 0$$

$$x = \frac{-5 \pm \sqrt{5^2 - 4(1)(-36)}}{2(1)} = \frac{-5 \pm \sqrt{25 + 144}}{2}$$

$$= \frac{-5 \pm \sqrt{169}}{2} = \frac{-5 \pm 13}{2} = \frac{8}{2} = 4$$

$$\frac{-18}{2} = -9$$

8)



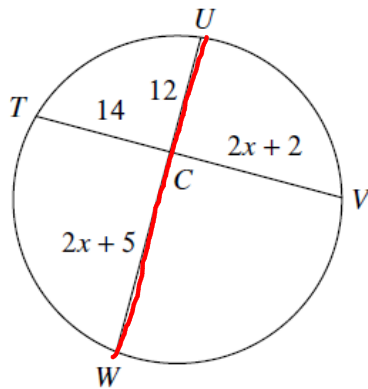
$$(14x)(8x) = (16)(7)$$

$$\frac{112x^2}{112} = \frac{112}{112}$$

$$\sqrt{x^2} = \sqrt{1}$$

$$x = 1$$

9) Find UW



$$(14)(2x+2) = (12)(2x+5)$$

$$28x + 28 = 24x + 60$$

$$\quad -28 \quad \quad -28$$

$$28x = 24x + 32$$

$$\quad -24x \quad -24x$$

$$4x = 32$$

$$x = 8$$

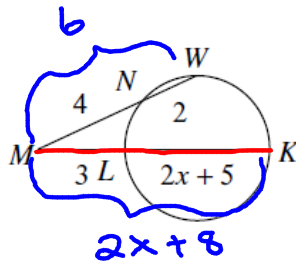
$$UW = 2x + 5 + 12$$

$$UW = 2x + 17$$

$$UW = 2(8) + 17$$

$$UW = 16 + 17 = \boxed{33}$$

10) Find KM



$$(6)(4) = (2x+8)(3)$$

$$24 = 6x + 24$$

$$\quad -24 \quad \quad -24$$

$$0 = 6x$$

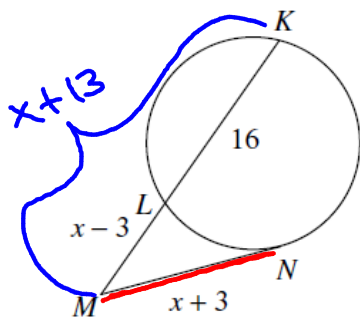
$$0 = x$$

$$KM = 3 + 2x + 5$$

$$KM = 8 + 2x$$

$$KM = 8$$

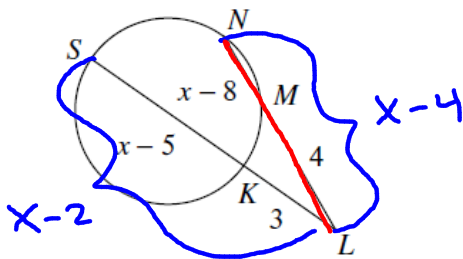
11) Find NM



$$\begin{aligned} NM &= x+3 \\ NM &= 12+3 \\ NM &= 15 \end{aligned}$$

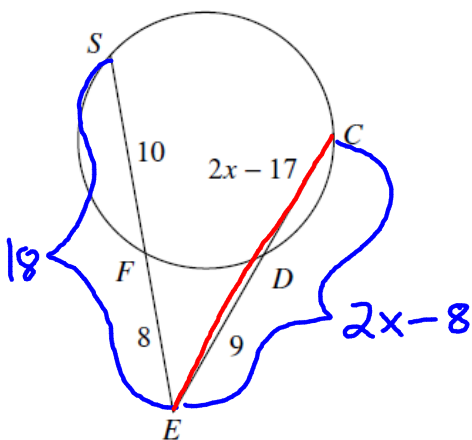
$$\begin{aligned} (x+13)(x-3) &= (x+3)^2 \\ (x+13)(x-3) &= (x+3)(x+3) \\ x^2 - 3x + 13x - 39 &= x^2 + 3x + 3x + 9 \\ x^2 + 10x - 39 &= x^2 + 6x + 9 \\ -x^2 &\quad -x^2 \\ 10x - 39 &= 6x + 9 \\ -6x &\quad -6x \\ 4x - 39 &= 9 \\ +39 &\quad +39 \\ \frac{4x}{4} &= \frac{48}{4} \\ x &= 12 \end{aligned}$$

12) Find NL



$$\begin{aligned} (x-4)(4) &= (x-2)(3) \\ 4x - 16 &= 3x - 6 \\ -3x &\quad -3x \\ x - 16 &= -6 \\ +16 &\quad +16 \\ x &= 10 \\ NL &= x-4 \\ NL &= 10-4 \\ NL &= 6 \end{aligned}$$

13) Find CE



$$(18)(8) = (2x - 8)(9)$$

$$144 = 18x - 72$$

$$+72 \quad +72$$

$$\frac{216}{18} = \frac{18x}{18} \quad x = 12$$

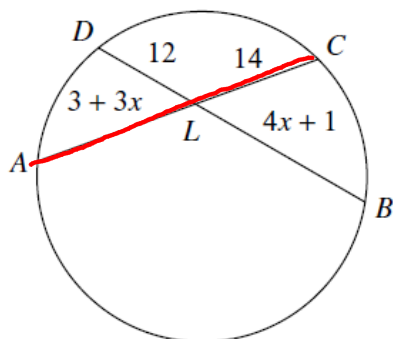
$$CE = 2x - 8$$

$$CE = 2(12) - 8$$

$$CE = 24 - 8$$

$$CE = 16$$

14) Find CA



$$(12)(4x + 1) = (14)(3 + 3x)$$

$$48x + 12 = 42 + 42x$$

$$-12 \quad -12$$

$$48x = 30 + 42x$$

$$-42x \quad -42x$$

$$6x = 30$$

$$x = 5$$

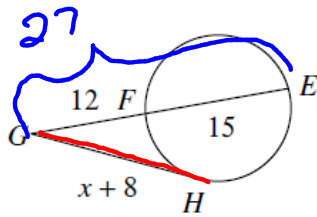
$$CA = 3 + 3x + 14$$

$$CA = 17 + 3x$$

$$CA = 17 + 3(5) = 17 + 15$$

$$CA = 32$$

15) Find HG



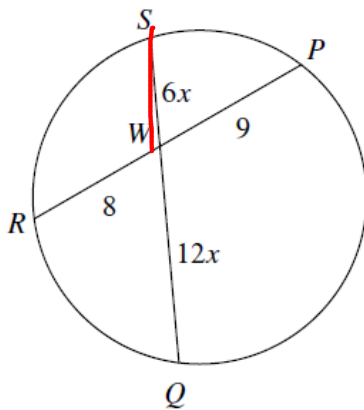
$$HG = x + 8$$

$$HG = 10 + 8$$

$$HG = 18$$

$$\begin{aligned} (27)(12) &= (x+8)^2 \\ 324 &= (x+8)(x+8) \\ 324 &= x^2 + 8x + 8x + 64 \\ 324 &= x^2 + 16x + 64 \\ -324 & \quad -324 \\ 0 &= x^2 + 16x - 260 \\ & \quad -260 \quad 16 \\ & \quad +10, -26 \quad -16x \\ & \quad -10, 26 \quad 16x \\ 0 &= (x-10)(x+26) \\ x &= 10 \text{ or } -26 \end{aligned}$$

16) Find SW



$$(9)(8) = (6x)(12x)$$

$$\frac{72}{72} = \frac{72x^2}{72}$$

$$1 = x^2$$

$$1 = x$$

$$SW = 6x = 6(1)$$

$$SW = 6$$